REMARKS

Claims 4-13, 16-21, 23-34, 37-40, 42-45, and 61-70 are pending in the presented application. In the Office Action mailed on April 23, 2007, the Examiner took the following action: (1) rejected claims 4-13 and 16-17 under 35 U.S.C. §103(a) as being unpatentable over Blohowiak (U.S. 5,869,141) in view of Shimizu (U.S. 4,374,890), and Dow Product Information (Den 425 Epoxy Novolac Resin); (2) rejected claims 18-19 and 61-62 under 35 U.S.C. §103(a) as being unpatentable over Blohowiak in view of Shimizu and Dow Product Information, and in further view of Montano (U.S. 6,616,976); (3) rejected claims 20-21 under 35 U.S.C. §103(a) as being unpatentable over Blohowiak in view of Shimizu and Dow Product Information, and in further view of Tola (U.S. 5,049,232); (4) rejected claim 23 under 35 U.S.C. §103(a) as being unpatentable over Blohowiak in view of Shimizu and Dow Product Information, and in further view of Poutasse (U.S. 5,629,098); (5) rejected claims 24-34 and 43-45 as being unpatentable over Blohowiak in view of Shimizu and Dow Product Information, and in further view of Konieczny (U.S. 6,769,956); (6) rejected claims 37-38, 63-64, and 67-68 under 35 U.S.C. §103(a) as being unpatentable over Blohowiak in view of Grylls (U.S. 2002/0192496A1), Vaughan (U.S. 3,967,091), Konieczny, Shimizu, Dow Product Information, and in further view of Montano (U.S. 6,616,976); (7) rejected claims 39-40, 66 and 70 as being unpatentable over Blohowiak in view of Grylls, Vaughan, Konieczny, Shimizu, Dow Product Information, and in further view of Tola; and (8) rejected claims 42, 65, and 69 as being unpatentable over Blohowiak in view of Grylls, Vaughan, Konieczny, Shimizu, Dow Product Information, and in further view of Poutasse. Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

I. Examiner Interview

Applicants respectfully express their appreciation to Examiner Sellman for the telephone interview held on July 17, 2007, during which the Examiner discussed the disposition of this case with the undersigned attorney. During the interview, it is believed that the applicants clarified the difference between claim 4 and the cited reference to Blohowiak. Specifically, claim 4 recites "applying a liquid adhesive coating *directly* to a sol-gel coating on the metal material," while Blohowiak disclose the application of an epoxy adhesive to a primer on a sol-gel coating. Additionally, the applicants and the Examiner also discussed the disclosure of the Dow Product Information sheet, as well as other amendments to the claims that may overcome the cited prior art.

II. Rejections under 35 U.S.C. §103(a)

Blohowiak (U.S. 5,869,141)

Blohowiak teaches a surface treatment, especially for titanium and aluminum alloys, that forms a sol-gel film covalently bonded on the metal surface to produce strong, durable adhesive bonds between the metal and organic adhesive without using toxic chemicals. (Column 2, Lines 62 to Column 3, Lines 31). This significantly reduces or eliminates the rinse water requirements of traditional anodizing or etching processes. (Column 1, Lines 28-45).

Shimizu (U.S. 4,374,890)

Shimizu teaches a method and an adhesive-sheet for the reinforcement of metal plates. (Column 1, Lines 7-9). The adhesive-sheet comprises a first epoxy resin composition layer and a second epoxy resin composition layer laminated thereon. (Column 1, Lines 66-68; Column 2, Lines 1-10). The first epoxy resin composition layer, when cured by heating, has a modulus of

elasticity in tension sufficient to increase the stiffness of the metal plate. (Column 2, Lines 25-30).

Dow Product Information (Den 425 Epoxy Novolac Resin)

Down Product Information teaches a novolac resin that is an epoxidized phenolic resin of higher functionality than standard bisphenol-A based liquid epoxy resins. (Dow Product Information, Page 1, Paragraph 2).

Claims 4-13

Claims 4-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Blohowiak in view of Shimizu and Dow Product Information. Claims 5-13 depend from claim 4. Applicants traverse the rejections. In particular, applicants respectfully assert that the cited references to Blohowiak and Shimizu, whether individually or in combination, do not disclose, teach or fairly suggest every aspect of claim 4. Claim 4 recites:

> 4. A continuous process for applying a sol-gel coating to a metal material and an adhesive coating onto the sol-gel coating, the process comprising:
>
> subjecting the metal material to a caustic solution of sodium hydroxide;
>
> rinsing the metal material with water to remove the caustic solution of sodium hydroxide from the metal material;
>
> applying a sol-gel coating to the metal material;
>
> evaporating the water portion of the sol-gel coating;
>
> applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material wherein the liquid adhesive coating is an epoxy-based adhesive coating including:
>
> an epoxy material comprising about 3-35% by wt. liquid diglycidylether of bisphenol-A, about 35-60% by wt. solid diglycidylether of bisphenol-A, about 10-30% by wt. novolac-epoxy, and about 5-18% by wt. carboxy-terminated acrylonitrile-butadiene rubber; and
>
> a second curative material comprising chromium octotate, and at least one of 4,4'-

diaminodiphenylsulfone, and 3,3'-diaminodiphenylsulfone; and

evaporating the solvent portion of the adhesive coating. (emphasis added).

First, Blohowiak does not teach or suggest, "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim in 4. Instead, Blohowiak discloses the application of a primer (21) to a sol gel coating on a metal material prior to the application of an epoxy adhesive (23). Specifically Blohowiak states, "With the sol gel coating complete the specimens were ready for *accepting primer (21)* and then an epoxy adhesive (23)." (emphasis added). (Column 6, Lines 26-29). Further, Blohowiak also states:

> *Our test specimens were primed with BMS 5-89 chromated adhesive primer (American Cyanamid BR127).* Two sol coated panels were then bonded together to form an adhesive lap joint in an autoclave using BMS 5-101 Type II Grade (Dexter-Hysol EA 9628) 250°F.cure epoxy adhesive. (emphasis added). (Column 6, Lines 31-35).

Additionally, Figure 1 of Blohowiak also shows a "prime" step 21 between the "oven dry" step 19 and "apply adhesive" step 23. (Figure 1).

Moreover, the deficiencies of Blohowiak are not remedied by the teachings of the cited reference to Shimizu. Shimizu discloses a process that involves applying a two component epoxy resin *directly* onto a metal plate so that the epoxy resin "comes into contact with the metal plate." (Column 2, Lines 46-50). In contrast, claim 4 recites "applying a liquid adhesive coating *directly* to the *sol-gel coating* on the metal material." (emphasis added).

Additionally, the deficiencies of Blohowiak are not remedied by the teachings of the Dow Product Information. Instead, Dow Product information's disclosures are related to the functions of the novolac compound as compared to standard bisphenol-A based liquid epoxy resins. (Dow Product Information, Page 1, Paragraph 2).

Second, as noted by the Examiner, Blohowiak does not teach or suggest, "a second curative material comprising chromium octotate, and at least one of 4,4'-diaminodiphenylsulfone

and 3,3'-diaminodiphenylsulfone," as recited in claim in 4. (Office Action, Page 3, Paragraph 4). Moreover, the deficiency of Blohowiak is not remedied by Shimizu. While Shimizu discloses an epoxy resin that includes 4,4'-diaminodiphenylsulfone, Shimizu does not disclose an epoxy resin that also includes 3,3'-diaminodiphenylsulfone and chromium octotate. (Column 3, Lines 43-47).

Therefore, each of the cited references to Blohowiak, Shimizu, and Dow Product Information, whether individually or in combination, does not teach, disclose or fairly suggest the process recited in claim 4. Furthermore, since claims 5-13 depend from claim 4, they are at least allowable for the same reason that makes claim 4 allowable over the cited references, as well as for additional limitations recited in those claims.

Claims 16-17

Claims 16-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Blohowiak in view of Shimizu and Dow Product Information. Claim 17 depends from claim 16. Claim 16 recites:

> 16. A continuous process for applying an adhesive coating onto a sol-gel coating on a metal material, the process comprising:
>
> applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material, wherein the liquid adhesive coating is an epoxy-based adhesive coating including an epoxy material comprising about 3-35% by wt. liquid diglycidylether of bisphenol-A, about 35-60% by wt. solid diglycidylether of bisphenol-A, *about 10-30% by wt. novolac-epoxy*, and about 5-18% by wt. carboxy-terminated acrylonitrile-butadiene rubber; and
>
> a second curative material comprising about 0-100% by wt. 4,4'- diaminodiphenylsulfone, about 0-100% by wt. 3,3'-diaminodiphenylsulfone, and about 0-0.2% by wt. chromium octotate; and
>
> evaporating the solvent portion of the adhesive coating. (emphasis added).

Applicants traverse the rejections. Specifically, applicants hereby respectfully incorporate the first argument presented above in response to the rejection of claim 4 under 35 U.S.C. §103(a) by analogy. Accordingly, applicants assert that Blohowiak does not teach or suggest, "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 16.

Specifically, Blohowiak discloses the application of a primer (21) to a sol-gel coating on a metal material prior to the application of an epoxy adhesive (23). Specifically Blohowiak states, "With the sol gel coating complete the specimens were ready for *accepting primer (21)* and then an epoxy adhesive (23)." (emphasis added). (Column 6, Lines 26-29). Further, Blohowiak also states:

> *Our test specimens were primed with BMS 5-89 chromated adhesive primer (American Cyanamid BR127).* Two sol coated panels were then bonded together to form an adhesive lap joint in an autoclave using BMS 5-101 Type II Grade (Dexter-Hysol EA 9628) 250°F.cure epoxy adhesive. (emphasis added). (Column 6, Lines 31-35).

Additionally, Figure 1 of Blohowiak also shows a "prime" step 21 between the "oven dry" step 19 and "apply adhesive" step 23. (Figure 1).

Moreover, the deficiencies of Blohowiak are not remedied by the teachings of the cited reference to Shimizu. Shimizu discloses a process that involves applying a two component epoxy resin *directly* onto a metal plate so that the epoxy resin "comes into contact with the metal plate." (Column 2, Lines 46-50). In contrast, claim 4 recites "applying a liquid adhesive coating *directly* to the *sol-gel coating* on the metal material." (emphasis added).

Accordingly, applicants respectfully submit that the cited references to Blohowiak, Shimizu, and Dow Product Information, whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 16. Furthermore, because claim 17 depends from claim 16, it is also allowable over the Blohowiak for at least the same reason claim 16 is allowable, as well as for additional limitations recited.

Montano (U.S. 6,616,976)

Montano teaches a process and composition for improving the adhesion between a metal surface and a polymeric material by treating the metal surface with an adhesion promotion composition followed by contacting the treated metal surface with an epoxy resin composition. (Column 5, Lines 5-10). The process and composition facilitate the production of circuit boards for electronic devices without concern that the polymeric material may delaminate or peel from the metal surface. (Column 5, Lines 20-26).

Claims 18-19 and 61-62

Claims 18-19 and 61-62 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Shimizu and Dow Product Information, and in further view of Montano. Claims 18-19 depend from claim 16, and claims 61-62 depend from claim 4. Applicants traverse the rejections.

Specifically, applicants hereby respectfully incorporate the argument presented above in response to the rejection of claim 4 and claim 16, respectively, under 35 U.S.C. §103(a). Accordingly, applicants assert that the cited references to Blohowiak, Shimizu, Dow Product Information do not teach the process recited in claim 4 and 16. Furthermore, the deficiencies of Blohowiak are also not remedied by the teachings of Montano. The cited reference to Montano discloses that an epoxy resin composition can be applied to a metal by spray coating, dip coating, and roller coating. (Column 9, Lines 41-46). However, the cited reference to Montano does not teach "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in each of the claims 4 and 16. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Shimizu, Dow Product Information, and Montano) whether individually or in combination, do not disclose, teach the process recited in claim 4 and claim 16, respectively. Further, because

claims 61-62 depend from claim 4, and claims 18-19 depend from claim 16, they are also allowable over the cited references at least due to their dependency, as well as for additional limitations recited in those claims.

Tola (U.S. 5,049,232)

Tola teaches a method of making a plurality of separate pressure transducers of the type comprising a strain gauge circuit bonded to a diaphragm, comprising the steps of providing an array of a plurality of strain gauge circuits formed on a laminated sheet and an array of a plurality of diaphragms corresponding to the array of the strain gauge circuits. (Column 1, Lines 29-55).

Claims 20-21

Claims 20-21 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak, in view of Shimizu and Dow Product Information, and in further view of Tola. Claims 20 and 21 depend from claim 16. Applicants traverse the rejections.

Specifically, applicants respectfully incorporate the argument presented above in response to the rejection of claim 16 under 35 U.S.C. §103(a). Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). However, cited reference to Tola does not teach "applying a liquid adhesive coating *to the sol-gel coating* on the metal material," as recited in claim 16. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Shimizu, Dow Product Information, and Tola) whether individually or in combination, do not disclose, teach the process recited in claim 16.

Furthermore, since claims 20-21 depend from claim 16, they are at least allowable for the same reason that makes claim 16 allowable over the cited references, as well as for additional limitations recited in those claims.

Poutasse (U.S. 5,629,098)

Poutasse teaches an adhesive composition that facilitates the product of laminates used in making printed circuit boards. (Column 1, Lines 9-14). The adhesive composition comprising (1) at least one multifunctional epoxy; (2) the composition derived from at least one difunctional epoxy resin and at least one compound represented by the formula $R-(G)_n$. (Column 1, Lines 46-50).

Claim 23

Claim 23 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Shimizu and Dow Product Information, and in further view of Poutasse. Claim 23 depend from claim 16.

Applicants respectfully incorporate the argument presented above in response to the rejection of claim 16 under 35 U.S.C. §103(a). Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Poutasse. The cited reference to Poutasse discloses applying an epoxy adhesive containing acetone to a foil to produce a laminate. (Column 4, Lines 48-59). However, cited reference to Poutasse does not teach "applying a liquid adhesive coating *to the sol-gel coating* on the metal material," as recited in claim 16. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Shimizu, Dow Product Information, and Poutasse) whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 16. Furthermore, since claim 23 depends from claim 16, it is at least allowable for the same reason that makes claim 16 allowable over the cited references, as well as for additional limitations presented.

Grylls (U.S. 2002/0192496)

Grylls teaches a method for producing a turbine airfoil that is coated with a beta phase, high aluminum content coating, such as substantially stoichiometric NiAl, and which has a surface finish suitable for application of a ceramic topcoat. (Paragraph 15).

Konieczny (U.S. 6,769,956)

Konieczny teaches an apparatus and method for precisely aligning a grit blasting nozzle. The invention includes a movable bracket, a nozzle dimensioned and configured for rapid, precise installation within the movable bracket, and may also optionally include a fixed bracket with at least one proximity sensor. (Column 3, Lines 11-20).

Claims 24-25

Claims 24-25 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Vaughan, Shimizu, Grylls, and in further view of Dow Product Information and Konieczny. Claim 25 depend from claim 24. Claim 24, as amended, recites:

> 24. A continuous surface preparation process for a metal material comprising:
> grit blasting the metal material with a mixture of fine particles of aluminum oxide in air and water, wherein the grit has a mesh size of about 180-320;
> rinsing the metal material with water to remove the grit;
> subjecting the metal material to a caustic solution of sodium hydroxide;
> rinsing the metal material with water to remove the caustic solution of sodium hydroxide;
> applying a sol-gel coating to the metal material;
> evaporating the water portion of the sol-gel coating;
> applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material wherein the liquid adhesive coating is an epoxy-based adhesive coating including:

an epoxy material comprising about 3-35% by wt. liquid diglycidylether of bisphenol-A, about 35-60% by wt. solid diglycidylether of bisphenol-A, about 10-30% by wt. novolac-epoxy, and about 5-18% by wt. carboxy-terminated acrylonitrile-butadiene rubber; and

a second curative material comprising about 0-100% by wt. 4,4'-diaminodiphenylsulfone, about 0-100% by wt. 3,3'-diaminodiphenylsulfone, and about 0-0.2% by wt. chromium octotate; and

evaporating the solvent portion of the adhesive coating. (emphasis added).

Applicants traverse the rejections. Specifically, applicants hereby respectfully incorporate the first argument presented above in response to the rejection of claim 4 under 35 U.S.C. §103(a) by analogy. Accordingly, applicants assert that the cited references to Blohowiak, Shimizu, Dow Product information do not teach or suggest, "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 24. (emphasis added).

Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Vaughan, Grylls, and Konieczny. The cited reference to Vaughan discloses a method of weld-bonding that includes grit blasting a titanium alloy with 50 micron alumina. (Column 4, Lines 34-38). Similarly, the cited reference Grylls discloses a method for producing a turbine airfoil that is coated with NiAl that involves grit blasting the NiAl coating using alumina particles mixed with compressed air and water vapor. (Paragraph 20). Additionally, the cited reference to Konieczny discloses that grit blasting may be used to create a roughed surface. (Column 1, Lines 16-24).

Therefore, the cited references (Blohowiak, Vaughan, Grylls, Shimizu, Dow Product Information, and Konieczny), whether individually or in combination, do not teach every aspect of claim 24. As a result, claim 24 is allowable. Further, because claim 25 depends from claim 24, claim 25 is at least allowable due to the same reason that claim 24 is allowable, as well as due to additional limitations recited.

Claims 26-34

Claims 26-34 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Vaughn, Shimizu, Grylls, and in further view of Dow Product Information and Konieczny. Claims 26-34 depend from claim 24. Applicants traverse the rejections. Specifically, applicants respectfully incorporate the argument presented above in response to the rejection of claim 24 and assert that claim 24 is allowable over the cited references. Furthermore, since claims 26-34 depend from claim 24, they are at least allowable for the same reason that makes claim 24 allowable over the cited references, as well as for additional limitations recited in those claims.

Claims 43-44

Claims 43-44 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Vaughn, Shimizu, Grylls, and in further view of Dow Product Information and Konieczny. Claim 44 depends from claim 43. Claim 43, as amended, recites:

> 43. A continuous surface preparation process for a metal material, said process comprising:
>
> grit blasting the metal material with a mixture of fine particles of aluminum oxide in air and water, wherein the grit has a mesh size of about 180-320;
>
> rinsing the metal material with water to remove the grit;
>
> subjecting the metal material to a caustic solution of sodium hydroxide wherein the caustic solution of sodium hydroxide has a concentration of about 10-50% by weight sodium hydroxide;
>
> rinsing the metal material with water to remove the caustic solution of sodium hydroxide from the metal material;
>
> applying a sol-gel coating to the metal material wherein the sol-gel is a mixture of a zirconium alkoxide, 3-glycidoxy-propyltrimethoxysilane, glacial acetic acid, and a surfactant;
>
> evaporating the water portion of the sol-gel coating;
>
> applying a liquid adhesive coating directly to the sol-gel coating on the metal material wherein the liquid adhesive coating is an epoxy-based adhesive coating including:

an epoxy material comprising about 3-35% by wt. liquid diglycidylether of bisphenol-A, about 35-60% by wt. solid diglycidylether of bisphenol-A, about 10-30% by wt. novolac-epoxy, and about 5-18% by wt. carboxy-terminated acrylonitrile-butadiene rubber; and

a second curative material comprising about 0-100% by wt. 4,4'-diaminodiphenylsulfone, about 0-100% by wt. 3,3'-diaminodiphenylsulfone, and about 0-0.2% by wt. chromium octotate; and

evaporating the solvent portion of the adhesive coating.

Applicants traverse the rejections. Specifically, applicants respectfully incorporate the argument presented above in response to the rejection of claim 24 by analogy. Accordingly, applicants assert that the cited references (Blohowiak, Grylls, Vaughan, Shimizu, Dow Product Information, and Konieczny), do not teach or suggest, "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 44. (emphasis added).

Furthermore, since claim 44 depends from claim 43, it is at least allowable for the same reason that makes claim 43 allowable over the cited references, as well as for additional limitations recited in those claims.

Claim 45

Claim 45 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Vaughn, Shimizu, Grylls, and in further view of Dow Product Information and Konieczny. Claim 45, as amended, recites:

45. A continuous surface preparation process for titanium foil material, said process comprising:

grit blasting the titanium foil with a mixture of fine particles of aluminum oxide in air and water, wherein the grit has a mesh size of about 280;

rinsing the foil with water to remove the grit from the foil;

subjecting the foil material to a caustic solution of sodium hydroxide wherein the caustic solution of sodium hydroxide has a concentration of about 25% by weight sodium hydroxide;

rinsing the foil with water to remove the caustic solution of sodium hydroxide from the foil;

applying a sol-gel coating to the foil wherein the sol-gel is a mixture of a zirconium n-propoxide 3-glycidoxy-propyltrimethoxysilane, glacial acetic acid, and a surfactant;

evaporating the water portion of the sol-gel coating;

applying a liquid adhesive coating *directly* to the sol-gel coating on the foil wherein the liquid adhesive coating is an epoxy-based adhesive coating including:

an epoxy material comprising about 3-35% by wt. liquid diglycidylether of bisphenol-A, about 35-60% by wt. solid diglycidylether of bisphenol-A, about 10-30% by wt. novolac-epoxy, and about 5-18% by wt. carboxy-terminated acrylonitrile-butadiene rubber; and

a second curative material comprising at least one of 4,4'-diaminodiphenylsulfone, 3,3'-diaminodiphenylsulfone, and chromium octotate; and

evaporating the solvent portion of the adhesive coating. (emphasis added).

Applicants traverse the rejection. Specifically, applicants respectfully incorporate the argument presented above in response to the rejection of claim 24 by analogy. Accordingly, applicants assert that the cited references (Blohowiak, Grylls, Vaughan, Shimizu, Dow Product Information, and Konieczny), do not teach or suggest, "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 45. (emphasis added).

Claims 37-38

Claims 37-38 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls, and in further view of Vaughan, Konieczny, Shimizu, Dow Product Information and Montano. Claims 37-38 depend from claim 24. Applicants traverse the rejections. Specifically, applicants hereby respectfully incorporate the argument presented above in response to the rejection of claim 24 under 35 U.S.C. §103(a) by analogy.

Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Montano. The cited reference to Montano discloses that an epoxy resin composition can be applied to a metal by spray coating, dip coating, and roller coating. (Column 9, Lines 41-46). However, the cited reference to Montano does not teach or suggest "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 24. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Dow Product Information and Montano) whether individually or in combination, does not disclose, teach, or fairly suggest the process recited in claim 24. Therefore, applicants respectfully that claims 37-38 are allowable at least due to their dependency on claim 24, as well as due to additional limitations recited in each claim.

Claims 63-64

Claims 63-64 are rejected under 35 U.S.C §103(a) as being unpatentable over Blohowiak in view of Grylls, and in further view of Vaughan, Konieczny, Shimizu, Dow Product Information, and Montano. Claims 63-64 depend from claim 43. Applicants traverse the rejections. Specifically, applicants hereby respectfully incorporate the argument presented above in response to the rejection of claim 43.

Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Montano. The cited reference to Montano discloses that an epoxy resin composition can be applied to a metal by spray coating, dip coating, and roller coating. (Column 9, Lines 41-46). However, cited reference to Montano does not teach or suggest "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 43. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Dow Product Information, and Montano) whether individually or

in combination, do not disclose, teach, or fairly suggest the process recited in claim 43. Moreover, applicants respectfully assert that claims 63-64 are allowable at least due to their dependency on claim 43, as well as due to additional limitations in each claim.

Claims 67-68

Claims 67-68 are rejected under 35 U.S.C §103(a) as being unpatentable over Blohowiak in view of Grylls, and in further view of Vaughan, Konieczny, Shimizu, Dow Product Information, and Montano. Claims 67-68 depend from claim 45. Applicants traverse the rejections. Specifically, applicants hereby respectfully incorporate the argument presented above in response to the rejection of claim 43.

Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Montano. The cited reference to Montano discloses that an epoxy resin composition can be applied to a metal by spray coating, dip coating, and roller coating. (Column 9, Lines 41-46). However, cited reference to Montano does not teach or suggest "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 43. (emphasis added).

Accordingly, applicants respectfully submit that the cited reference (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Dow Product Information, and Montano) whether individually or in combination, do not disclose, teach, or fairly suggest the process recited in claim 43. Moreover, applicants respectfully assert that claims 63-64 are allowable at least due to their dependency on claim 43, as well as due to additional limitations in each claim.

Claims 39-40

Claims 39-40 are rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls and in further view of Vaughan, Konieczny, Shimizu, Tola, and Dow Product Information. Claims 39-40 depends from claim 24. Applicants traverse the rejections.

Specifically, applicants respectfully incorporate the first argument presented above in response to the rejection of claim 24. Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). However, Tola does not teach or suggest "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 24. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Tola, and Dow Product Information) whether individually or in combination, do not disclose, teach, or fairly suggest the process recited in claim 24. Therefore, applicants respectfully assert that claim 39-40 are allowable at least due to its dependency on claim 24, as well as due to additional limitations recited in the claim.

Claim 66

Claim 66 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls and in further view of Vaughan, Konieczny, Shimizu, Tola, and Dow Product Information. Claim 66 depends from claim 43. Applicants traverse the rejection.

Specifically, applicants respectfully incorporate the first argument presented above in response to the rejection of claim 43. Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). However, Tola does not teach or suggest "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 43. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Tola, and Dow Product Information) whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 43. Therefore,

applicants respectfully assert that claim 65 is allowable at least due to its dependency on claim 43, as well as due to additional limitations recited in the claim.

Claim 70

Claim 70 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls and in further view of Vaughan, Konieczny, Shimizu, Tola, and Dow Product Information. Claim 70 depends from claim 45. Applicants traverse the rejection.

Specifically, applicants respectfully incorporate the first argument presented above in response to the rejection of claim 45. Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). However, Tola does not teach or suggest "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 45. (emphasis added).

Accordingly, applicants respectfully submit that the cited reference (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Tola, and Dow Product Information) whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 45. Therefore, applicants respectfully assert that claim 70 is allowable at least due to its dependency on claim 43, as well as due to additional limitations recited in the claim.

Claim 42

Claim 42 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls and in further view of Vaughan, Konieczny, Shimizu, Tola, Dow Product Information, and Poutasse. Claim 42 depends from claim 24. Applicants traverse the rejection.

Specifically, applicants respectfully incorporate the first argument presented above in response to the rejection of claim 24. Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola and Poutasse. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). The cited reference to Poutasse discloses applying an epoxy adhesive containing acetone to a foil to produce a laminate. (Column 4, Lines 48-59). However, each of the cited references does not teach "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 24. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Tola, Dow Product Information, and Poutasse) whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 24. Therefore, applicants respectfully assert that claim 42 is allowable at least due to its dependency on claim 24, as well as due to additional limitations recited in the claim.

Claim 65

Claim 65 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls and in further view of Vaughan, Konieczny, Shimizu, Tola, Dow Product Information, and Poutasse. Claim 65 depends from claim 43. Applicants traverse the rejection.

Specifically, applicants respectfully incorporate the first argument presented above in response to the rejection of claim 43. Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola and Poutasse. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). The cited reference to Poutasse discloses applying an epoxy adhesive containing acetone to a foil to produce a laminate. (Column 4, Lines 48-59). However, each of the cited references does not teach "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 43. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Tola, Dow Product Information, and Poutasse) whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 43. Therefore, applicants respectfully assert that claim 65 is allowable at least due to its dependency on claim 43, as well as due to additional limitations recited in the claim.

Claim 69

Claim 69 is rejected under 35 U.S.C. §103(a) as unpatentable over Blohowiak in view of Grylls and in further view of Vaughan, Konieczny, Shimizu, Tola, Dow Product Information, and Poutasse. Claim 69 depends from claim 45. Applicants traverse the rejection.

Specifically, applicants respectfully incorporate the first argument presented above in response to the rejection of claim 45. Moreover, the deficiencies of Blohowiak are also not remedied by the teachings of Tola and Poutasse. The cited reference to Tola discloses a method for forming a foil/dielectric laminate with an adhesive layer of about 0.4 mils. (Column 3, Lines 44-48). The cited reference to Poutasse discloses applying an epoxy adhesive containing acetone to a foil to produce a laminate. (Column 4, Lines 48-59). However, each of the cited references does not teach "applying a liquid adhesive coating *directly* to the sol-gel coating on the metal material," as recited in claim 45. (emphasis added).

Accordingly, applicants respectfully submit that the cited references (Blohowiak, Grylls, Vaughan, Konieczny, Shimizu, Tola, Dow Product Information, and Poutasse) whether individually or in combination, do not disclose, teach or fairly suggest the process recited in claim 45. Therefore, applicants respectfully assert that claim 69 is allowable at least due to its dependency on claim 43, as well as due to additional limitations recited in the claim.

III. New Claim

Claims 71

Claim 71 is newly added. Claim 71 depend from and apply additional limitations to claim 4. Accordingly, claim 71 are allowable for at least the same reasons that make claim 4 allowable, as well for additional limitations recited.

CONCLUSION

Applicants respectfully submit that pending claims 4-13, 16-21, 23-34, 37-40, 42-45, and 61-71 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

Dated: 7-25-07

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